



UNITED STATES PATENT AND TRADEMARK OFFICE

Lee
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,270	03/26/2004	George Z. Radominski	200400194-1	8537

22879 7590 04/05/2007

HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

EGGINS, KRISTAL J

ART UNIT	PAPER NUMBER
----------	--------------

2861

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/810,270	Applicant(s) RADOMINSKI ET AL.	
	Examiner K. Feggins	Art Unit 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/17/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-14, 16, 17 and 33-37 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9, 18, 19 and 23-31 is/are rejected.
- 7) ☒ Claim(s) 6 and 20-22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 18-26 & 28 is withdrawn in view of the newly discovered reference(s) to Miyazaki (US 3,553,719). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 7-9, 18, 19, 23-26, & 28-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyazaki (US 3,555,719):

Miyazaki disclose the following claimed limitations:

- * regarding claim 1, a fluid-ejection device (Abstract, figs 1-4);
- * at least one nozzle (see figs 1-4) operatively associated with at least one displacement unit configured to impart mechanical energy on fluid associated with the nozzle to cause a fluid drop to be ejected from the nozzle (col 2, lines 5-38, figs 1-4);
- * a cathode ray tube/1/ configured to supply energy to selectively/ink is ejected according to voltage signal/ effect the displacement unit to control ejection of the fluid drop (col 2, lines 5-38, figs 1-4).

* Re claim 2, wherein the cathode ray tube/1/ comprises a cathode ray pin tube/34/ having at least one conductor/33/ configured to receive an electron beam generated by the cathode ray tube/31/, the at least one conductor/33/ being electrically coupled to an individual displacement unit via a conductive path (fig 4).

* Re claim 3, wherein the cathode ray pin tube/34/ is configured to emit an electron beam along a first axis and wherein the at least one conductor/33/ extends along a second axis which is generally orthogonal to the first axis (fig 4).

* Re claim 4, wherein the cathode ray pin tube/31/ is configured to emit an electron beam along a first axis and wherein conductor extends along a second axis which is generally parallel to the first axis (fig 4).

* Re claim 5, wherein the cathode ray pin tube/31/ is configured to emit an electron beam along a first axis and wherein conductive pin extends along a second axis which is generally obtuse to the first axis (figs 3 & 4).

* Re claim 7, wherein the at least one displacement unit comprises multiple independently controllable displacement units associated with the nozzle (figs 2 & 4).

* Re claim 8, wherein the displacement unit/33, 34, 36 or 4, 15/ comprises a deformable membrane/15/ (figs 2 & 4).

* Re claim 9, wherein the at least one nozzle comprises a number of nozzles, and wherein the at least one displacement unit consists of a number of displacement units which equals a number of nozzles (fig 4).

* Re claim 18, a fluid-ejection device (Abst., figs 1-4)

* a fluid assembly defining a plurality of nozzles for ejecting fluid droplets ((figs 2 & 4);

* a cathode ray pin tube/31/ associated with the fluid assembly and configured to selectively effect ejection of fluid droplets from individual nozzles (fig 3 & 4).

* Re claim 19, wherein the fluid assembly comprises a plurality of displacement units, individual displacement units associated with an individual nozzle and configured to impart mechanical energy on fluid proximate the displacement unit sufficient to cause fluid to be ejected from an individual nozzle (figs 2 & 4).

* Re claim 23, fluid-ejection device (Abst., figs 1-4)

* a fluid assembly comprising at least one displacement unit and an associated nozzle through which fluid can be selectively ejected (col 2, lines 5-38, figs 1-4);

* at least one electron beam generation/2 or 32/ assembly configured to modulate and steer an electron beam to energize individual displacement units sufficient to cause a fluid drop to be ejected from the associated nozzle (figs 2 & 4).

* Re claim 24, wherein the electron beam generation assembly comprises deflection plates/coils, 3 or 42/ configured to steer the electron beam (figs 2 & 4).

* Re claim 25, wherein the electron beam generation assembly comprises a deflection mechanism/coils, 3 or 42/ configured to steer the electron beam (figs 2 & 4).

* Re claim 26, wherein the electron beam generation assembly is configured to control the current of the electron beam as a means to modulate the electron beam (figs 2 & 4).

* Re claim 28, wherein the electron beam generation assembly comprises at least one field emitter (figs 1-4).

Re claim 29, a fluid-ejection device (Abst., figs 1-4)

* a means/electron gun, 2, 32/ for imparting mechanical energy on fluid contained in an associated chamber sufficient to cause fluid to be ejected from the chamber (col 2, lines 5-38, figs 1-4);

* a first conductor/thin film, 4 or 33/ configured to deliver a first signal to the means for imparting mechanical energy (figs 2 & 4);

* an electron beam source/2, 32/ configured to deliver energy to the first conductor/4, 33/ (figs 2 & 4).

* Re claim 30, wherein the means for imparting mechanical energy comprises a displaceable assembly/33/ and a fixed assembly/34/ (fig 2 & 4).

* Re claim 31, wherein the electron beam source is configured to deliver the energy independent of any fluid-ejection device integrated control circuitry (fig 4).

Response to Arguments

4. Applicant's arguments with respect to claims 1, 29 & 31 have been considered but are moot in view of the new ground(s) of rejection. Please see the above new rejection Miyazaki (US 3,555,719). Miyazaki disclose a cathode ray tube having pins and a conductive layer to eject ink droplets.

Allowable Subject Matter

5. Claims 10-14, 16, 17 & 33-37 are allowed.

Claims 6, 20-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The primary reason for indicating allowable subject matter of claim 6 is the inclusion of the limitations of a fluid ejection device that includes at least one displacement unit comprises a fixed assembly and a displaceable assembly and wherein the displaceable assembly is configured to move relative to the fixed assembly to impart the mechanical energy on the liquid. It is this limitation found in the claims, as

Art Unit: 2861

it is claimed in the combination of that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

: The primary reason for indicating allowable subject matter of claims 20-22 is the inclusion of the limitations of a fluid ejection device that includes wherein the cathode ray pin tube comprises a plurality of electrically isolated conductors and wherein the fluid assembly comprises a plurality of conductors individually coupled to the displacement units and wherein individual conductors of the cathode ray pin tube are electrically coupled to individual conductors of the fluid assembly. It is these limitations found in the claims, as they are claimed in the combination of that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Communication With The USPTO

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Feggins whose telephone number is 571-272-2254. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patel Vip can be reached on 571-272-2458. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

 4/07
K. FEGGINS
PRIMARY EXAMINER